CLAIMS

1. A virus suppressing factor (VSF) protein having the following properties:

(a) it is increasingly produced in an immune cell stimulated by a variant of encephalomyocarditis virus, EMC-DV;

(b) it has an antiviral activity which is unchanged by immunoprecipitation and immunoneutralization;

(c) it is inactivated by proteinase K;

(d) it is not one of the group of antiviral cytokines consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, IL-17, IL-18, G-CSF, GM-CSF, TNF-α, TNF-β, IFN-α, IFN-β, IFN-γ, TGF-β, RANTES, MIP-1α, MIP-1β, MIP-1γ, MCP-1, MCP-3, IP-10 and lymphotactin;

(e) it comprises about 55 kDa polypeptide (H), about 30 kDa polypeptides (L1 and L2) and about 25 kDa polypeptide (L3); and

(f) it has a molecular weight of over about 100 kDa.

2. A virus suppressing factor (VSF) protein having the following properties:

(a) it is increasingly produced in an immune cell stimulated by a variant of encephalomyocarditis virus, EMC-DV;

(b) it has an antiviral activity which is unchanged by immunoprecipitation and immunoneutralization;

(c) it is inactivated by proteinase K;

(d) it is not one of the group of antiviral cytokines consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, IL-17, IL-18, G-CSF, GM-CSF, TNF-α, TNF-β, IFN-α, IFN-β, IFN-γ, TGF-β, RANTES, MIP-1α, MIP-1β, MIP-1γ, MCP-1, MCP-3, IP-10 and lymphotactin;

(e) it comprises about 55 kDa polypeptide (H), about 30 kDa polypeptides (L1 and L2) and about 25 kDa polypeptide (L3);

(f) it has a molecular weight of over about 100 kDa;

(g) the H polypeptide has a DNA sequence designated as SEQ ID NO: 1 and an amino acid sequence designated as SEQ ID NO: 2; and

(h) the L3 polypeptide has a DNA sequence designated as SEQ ID NO: 3 and an amino acid sequence designated as SEQ ID NO: 4.

3. The VSF protein as set forth in claim 1 or 2, wherein the antiviral activity is to suppress proliferation or replication of a virus belonging to the genus *Orthomyxoviridae*, *Picornaviridae*, *Retroviridae* or *Herpes*.

4. A method producing a hybridoma, comprising fusing an immune cell stimulated by a variant of encephalomyocarditis virus, EMC-DV, with a tumor cell, and producing the hybridoma secreting a virus suppressing factor (VSF) protein.

5. A method of preparing a virus suppressing factor (VSF) protein, comprising producing a hybridoma secreting a VSF protein by fusing an immune cell stimulated by a variant of encephalomyocarditis virus, EMC-DV, with a tumor cell, culturing the said hybridoma, and isolating the VSF protein from a culture fluid of the said hybridoma.

6. A method of preparing a virus suppressing factor (VSF) protein, comprising producing a hybridoma secreting the VSF protein by fusing an immune cell stimulated by a variant of encephalomyocarditis virus, EMC-DV, with a tumor cell, injecting the said hybridoma into an animal, and isolating the VSF protein from an ascitic fluid obtained from the said animal.

7. The method as set forth in claim 5 or 6, wherein the VSF protein is isolated from the culture fluid or ascitic fluid using a Blue Sepharose column, a Protein A agarose column, a hydroxyapatite resin column, an FPLC column, or sucrose gradient.

8. A hybridoma producing a virus suppressing factor (VSF) protein, which is prepared by fusing an immune cell stimulated by a variant of encephalomyocarditis virus, EMC-DV, with a tumor cell.

9. The hybridoma as set forth in claim 8, wherein the hybridoma is a hybridoma 4D1B (accession number KCLRF-BP-00052).

10. A pharmaceutical composition for prevention and treatment of viral infections, comprising a therapeutically or preventively effective amount of the VSF protein of claim 1 or 2 and a pharmaceutically acceptable carrier.

11. A method of preventing or treating viral infections, comprising administering a therapeutically or preventively effective amount of the VSF protein of claim 1 or 2 to a subject suffering from a viral infection.